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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/575,848	04/14/2006	Gerhard Caspers	2360 0968 US	9380
29894 7590 06/27/2008 DREISS, FUHLENDORF, STEIMLE & BECKER POSTFACH 10 37 62 D-70032 STUTTGART, GERMANY				
EXAMINER SAVAGE, JASON L				
ART UNIT		PAPER NUMBER		
1794				
MAIL DATE		DELIVERY MODE		
06/27/2008		PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/575,848

Applicant(s)

CASPERS ET AL.

Examiner

JASON L. SAVAGE

Art Unit

1794

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 13-27 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 13-27 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/55/08)
Paper No(s)/Mail Date 20060414
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date ____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: ____

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1—27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Steeg et al. (US 5,955,202) in view of Steffens et al. (US 2004/0101218).

Steeg teaches a plain bearing composite comprising a steel backing **1**, a lead bronze carrier layer **2**, an optional intermediate diffusion barrier **3**, and a sliding layer comprising AlSn(20)Cu(0.5) (col. 3, ln. 21-37 and col. 4, ln. 4-13). Steeg further teaches the sliding layer may comprise Sn between 15 to 36 wt% Sn and 0.1 to 30 wt% Cu (col. 2, ln. 43-48); however it does not exemplify an embodiment wherein the tin and copper contents fall within the claimed range or that the hardness is within the claimed range.

Steffens teaches a sliding layer composition having improved properties when compared to AlSn20Cu such as increased fatigue strength and hardness (par[0015]). Steffens further teaches that the sliding layer is Al AlSnCu alloy wherein Sn is between 20-23 and Cu is 1.8-2.3 (par[0014]).

It would have been within the purview of one of ordinary skill in the art at the time of the invention to have substituted the AlSnCu alloy coating wherein Sn is between 20-23 and Cu is 1.8-2.3 wt% as taught by Steffens with a reasonable expectation of

success of forming a sliding layer having increase fatigue resistance and hardness for the plain bearing of Steeg.

Regarding the limitation that the sliding layer is sputtered onto the carrier layer, the claims are drawn to an article, not the method of making. Absent a teaching or showing how the sputter formed coating would differ from that of the prior art, it would not provide a patentable distinction over the prior art. Furthermore, Steeg teaches that applying AlSnCu coatings by sputtering is known. It would have been obvious to have applied the coating by any conventional method with a reasonable expectation of success.

Regarding the limitation that the hardness is between 110 and 150 HV 0.002. The AlSnCu coating overlaps the claimed coating with Sn contents of 22-23 and Cu of 2.3 (par[0014]). As such, it is expected that the hardness of the sliding layer would be within the claimed range since the same alloy is used to form the sliding layer. Specific claimed alloy, whose compositions are in such close proportions to those in the prior art that, prima facie one skilled in the art would have expected them to have the same properties, must be considered to have been obvious from known alloys, Titanium Metals Corporation of America V. Banner, 227 USPQ 773.

Regarding claim 14, Steffens teaches the sliding layer may further comprise up to 0.1 wt% Ni, 0.7 wt% Si and 0.7 wt% Mn which would meet the claim limitation (par[0014]).

Regarding claim 15, Steeg teaches an intermediate layer 3 is formed (col. 3, ln. 28-30).

Regarding claims 16 and 18, the sliding layer is lead free and the bearing contains no antimony.

Regarding claim 17, although Steeg discloses the carrier layer contains lead, it would have been within the purview of one of ordinary skill in the art to have recognized that alternate carrier layer materials could be employed with a reasonable expectation of success. One would have been motivated to use a lead-free material since lead is known to have potentially adverse properties that could be eliminated by using materials which are lead free.

Regarding claims 19-20, the sliding layer having a Sn content between 22-23 and Cu content of 2.3 would meet the claim limitations.

Regarding claim 21, although Steffens does not exemplify an alloy having a Cu content of 2.4, however since Steffens teaches a Cu content of 2.4 and Steeg teaches the copper content may go as high as 30, it would have been obvious to one of ordinary skill to use a Cu content of 2.4 with a reasonable expectation of success of forming a sliding layer having good fatigue resistance and hardness.

Regarding claims 22-24, since the prior art teaches alloys having the same composition as that claimed, the hardness would be expected to be substantially similar since it uses alloys having the claimed composition.

Regarding claims 25-26, the prior art does not teach the claimed compositions for the carrier layer, however it would have been obvious to have employed any conventional copper alloy such as those claimed for the carrier layer with a reasonable expectation of success.

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Regarding claim 27, the plain bearing of Steeg could be employed in automotive applications.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JASON L. SAVAGE whose telephone number is (571)272-1542. The examiner can normally be reached on M-F 6:30-4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Keith Hendricks can be reached on 571-272-1401. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Jason Savage/
6-22-08

/KEITH D. HENDRICKS/
Supervisory Patent Examiner, Art Unit 1794